

**TYPE SYSTEM**

Application Serial No.: 10/824,253

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Examiner: Marina Lee

Listing of Claims:

1. (Currently Amended) A computer-readable medium encoded with a data structure, the data structure for a type system implemented within a computing environment and the data structure providing requested services on an artifact in the type system, the data structure comprising:

- a) a ClrElement base class for capturing common functionality of objects of the type system, the ClrElement enabled to be associated with the artifact without specific knowledge of the artifact, the artifact comprising one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies;
- b) at least one controller object, the controller object in communication with the base class, the at least one controller object validating the requested services based on a set of rules associated with a programming language; and
- c) a first class providing a search for the artifact in the type system without directly specifying the artifact, and the first class providing a level of abstraction between a second class and a third class in the type system meta-model, the second class and the third class searchable by the first class.

2. (Cancelled)

3. (Original) The computer-readable medium of claim 1, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.

4. (Original) The computer-readable medium of claim 1, wherein the base class determines the at least one controller object to communicate with in order to validate the requested services.

5. (Cancelled)
6. (Previously Presented) The computer-readable medium of claim 1, wherein the second class and the third class comprise nested classes.
7. (Previously Presented) The computer-readable medium of claim 1, wherein the second class and the third class include nested namespaces.
8. (Previously Presented) The computer-readable medium of claim 1, wherein the data structure further comprises:
  - d) a container for storing types in the type system.
9. (Original) The computer-readable medium of claim 1, wherein the requested services comprise modifying the artifact in the type system.
10. (Original) The computer-readable medium of claim 1, wherein the requested services comprise creating a new artifact in the type system.

11. (Currently Amended) A method of modifying an artifact for use in a type system meta-model, the method comprising:

- ~~[[d]]~~a) receiving a request from an application programming interface to modify an artifact in the type system meta-model, the artifact comprising one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event, wherein the type system meta-model comprises a ClrElement base class for capturing common functionality of objects of the type system in association with the artifact without directly specifying the artifact, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies, and the type system meta-model ~~includes~~ including a first class providing for a search for the artifact in the type system without directly specifying the artifact, the first class providing a level of abstraction between a second class and a third class in the type system meta model, the second class and the third class searchable by the first class;
- ~~[[e]]~~b) in response to issuing at least one instruction to a language specific controller object, the language specific controller object validating the request to modify the artifact based on rules associated with a programming language; and
- ~~[[f]]~~c) in response to a validated request from the language specific controller, modifying the artifact.

12. (Original) The method of modifying an artifact for use in a type system meta-model of claim 11, wherein the method further comprises the step of:

- d) transmitting a response to the application programming interface that the artifact has been modified.

13. (Cancelled)

14. (Original) The method of modifying an artifact for use in a type system meta-model of claim 11, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.

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15. (Currently Amended) A method of creating an artifact for use in a type system meta-model, the method comprising:

~~[[s]]~~a) receiving a request from an application programming interface to create an artifact in the type system meta-model, the artifact comprising one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event, wherein the type system meta-model comprises a ClrElement base class for capturing common functionality of objects of the type system in association with the artifact without directly specifying the artifact, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies, and the type system meta-model ~~includes~~ including a first class providing for a search for the artifact in the type system without directly specifying the artifact, the first class providing a level of abstraction between a second class and a third class in the type system meta model, the second class and the third class searchable by the first class;

~~[[b]]~~b) in response to issuing at least one instruction to a language specific controller object, the language specific controller object validating the request to create the artifact based on rules associated with a programming language; and

~~[[b]]~~c) in response to a validated request from the language specific controller, creating the artifact.

16. (Original) The method of creating an artifact for use in a type system meta-model of claim 15, wherein the method further comprises the step of:

d) transmitting a response to the application programming interface that the artifact has been created.

17. (Cancelled)

18. (Original) The method of creating an artifact for use in a type system meta-model of claim 15, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.

19. (Previously Presented) The method of modifying an artifact for use in a type system meta-model of claim 11, the second class and the third class comprise nested classes.

20. (Previously Presented) The method of modifying an artifact for use in a type system meta-model of claim 11, the second class and the third class include nested namespaces.

21. (Previously Presented) The method of creating an artifact for use in a type system meta-model of claim 15, the second class and the third class comprise nested classes.

22. (Previously Presented) The method of creating an artifact for use in a type system meta-model of claim 15, the second class and the third class include nested namespaces.